



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/058,228	01/29/2002	Lawrence Wilcock	1509-265	2267

7590 08/08/2005

LOWE HAUPTMAN GILMAN & BERNER  
Suite 310  
1700 Diagonal Road  
Alexandria, VA 22314

EXAMINER

FLANDERS, ANDREW C

ART UNIT	PAPER NUMBER
2644	

DATE MAILED: 08/08/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/058,228

Applicant(s)

WILCOCK ET AL.

Examiner

Andrew C. Flanders

Art Unit

2644

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 29 January 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-44 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-44 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☒ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Oath/Declaration***

The oath or declaration is defective. A new oath or declaration in compliance with 37 CFR 1.67(a) identifying this application by application number and filing date is required. See MPEP §§ 602.01 and 602.02.

The oath or declaration is defective because:  
The oath or declaration is not signed by the inventors.

### ***Claim Objections***

Claims 21 - 44 objected to because of the following informalities: Claims 21 – 44 should be re-written to read “An apparatus...”. Appropriate correction is required.

Further, the word “synthesised” should be changed to read “synthesized” in any claims it appears.

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 31 and 43 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 31 and 43 recites the limitation "said specification data" in line 14. There is insufficient antecedent basis for this limitation in the claim. For the purpose of expediting prosecution, it appears the term should be said segmentation data and will be understood as such for this action.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

**Claims 1 – 19, 21 – 31 and 33 - 43** are rejected under 35 U.S.C. 102(b) as being anticipated by Inanaga (U.S. Patent 5,526,429).

Regarding **Claim 1**, Inanaga discloses:

An audio user-interfacing method in which items are represented in an audio field by corresponding synthesized sound sources from where sounds related to the items appear to emanate (title and abstract), the method comprising the steps of:

(a) specifying a division of the audio field into multiple segments (i.e. obtaining the sense of a sound field as if a plurality of speaker apparatus were disposed at the virtual sound source positions to reproduce sounds; col. 11 lines 17 -21); and

(b) in response to a predetermined user input indicative of at least one of said segments, selectively changing the audibility of the synthesized sound sources in at least one segment (i.e. for each set of tables, the shapes of the head and the auricles of the listener are varied and values of data are varied in response to characteristics of the headphone, one of the three sets of tables is selected by the switcher; col. 10 lines 15 – 25 and when characteristics of the audio signals supplied to the headphones are varied in accordance with the direction of the head of the listener based on the table memorized in memory the characteristics of the audio signals can be varied in accordance with the direction of the head of the listener; col. 11 lines 20 – 27).

Regarding **Claim 2**, in addition to the elements stated above regarding claim 1, Inanaga further discloses:

wherein step (b) involves changing the audibility of the synthesized sound sources in said at least one segment from un-muted to at least partially muted (i.e. when characteristics of the audio signals supplied to the headphones are varied in accordance with the direction of the head of the listener based on the table memorized in memory the characteristics of the audio signals can be varied in accordance with the direction of the head of the listener; col. 11 lines 20 - 27. Depending on the required re-orientation of the sound field, it is inherent that the moving will cause the system to mute

and un-mute the speakers in order to effectively rotate the simulated sound field sources).

Regarding **Claim 3**, in addition to the elements stated above regarding claim 2, Inanaga further discloses:

wherein the changing of the audibility of the sound sources in a said segment from un-muted to at least partially muted leaves the audibility of the sound sources in the other segments unchanged (i.e. when characteristics of the audio signals supplied to the headphones are varied in accordance with the direction of the head of the listener based on the table memorized in memory the characteristics of the audio signals can be varied in accordance with the direction of the head of the listener; col. 11 lines 20 - 27. Depending on the required re-orientation of the sound field, it is inherent that the moving will cause the system to mute and un-mute the speakers in order to effectively rotate the simulated sound field sources).

Regarding **Claim 4**, in addition to the elements stated above regarding claim 2, Inanaga further discloses:

wherein changing the audibility of the sound sources in a said segment from un-muted to an at least partially muted causes any previously at-least-partially muted sound sources in other segments to become un-muted (i.e. when characteristics of the audio signals supplied to the headphones are varied in accordance with the direction of the head of the listener based on the table memorized in memory the characteristics of

Art Unit: 2644

the audio signals can be varied in accordance with the direction of the head of the listener; col. 11 lines 20 - 27. Depending on the required re-orientation of the sound field, it is inherent that the moving will cause the system to mute and un-mute the speakers in order to effectively rotate the simulated sound field sources).

Regarding **Claim 5**, in addition to the elements stated above regarding claim 1, Inanaga further discloses:

wherein the audibility of sound sources that have been at least partially muted as a result of said predetermined input, automatically returns to un-muted after a predetermined period (i.e. when characteristics of the audio signals supplied to the headphones are varied in accordance with the direction of the head of the listener based on the table memorized in memory the characteristics of the audio signals can be varied in accordance with the direction of the head of the listener; col. 11 lines 20 - 27. Depending on the required re-orientation of the sound field, it is inherent that the moving will cause the system to mute and un-mute the speakers in order to effectively rotate the simulated sound field sources).

Regarding **Claim 6**, in addition to the elements stated above regarding claim 1, Inanaga further discloses:

wherein step (b) involves changing the audibility of the synthesized sound sources in said at least one segment from at least partially muted to un-muted (i.e. when characteristics of the audio signals supplied to the headphones are varied in

Art Unit: 2644

accordance with the direction of the head of the listener based on the table memorized in memory the characteristics of the audio signals can be varied in accordance with the direction of the head of the listener; col. 11 lines 20 - 27. Depending on the required re-orientation of the sound field, it is inherent that the moving will cause the system to mute and un-mute the speakers in order to effectively rotate the simulated sound field sources).

Regarding **Claim 7**, in addition to the elements stated above regarding claim 6, Inanaga further discloses:

wherein changing the audibility of the sound sources in a said segment from at least partially muted to un-muted leaves the audibility of sound sources in the other segments unchanged (i.e. when characteristics of the audio signals supplied to the headphones are varied in accordance with the direction of the head of the listener based on the table memorized in memory the characteristics of the audio signals can be varied in accordance with the direction of the head of the listener; col. 11 lines 20 - 27. Depending on the required re-orientation of the sound field, it is inherent that the moving will cause the system to mute and un-mute the speakers in order to effectively rotate the simulated sound field sources).

Regarding **Claim 8**, in addition to the elements stated above regarding claim 6, Inanaga further discloses:



wherein changing the audibility of the sound sources in a said segment from at least partially muted to un-muted causes any previously un-muted sound sources in other segments to become at least partially muted (i.e. when characteristics of the audio signals supplied to the headphones are varied in accordance with the direction of the head of the listener based on the table memorized in memory the characteristics of the audio signals can be varied in accordance with the direction of the head of the listener; col. 11 lines 20 - 27. Depending on the required re-orientation of the sound field, it is inherent that the moving will cause the system to mute and un-mute the speakers in order to effectively rotate the simulated sound field sources).

Regarding **Claim 9**, in addition to the elements stated above regarding claim 6, Inanaga further discloses:

wherein the audibility of sound sources that have been un-muted as a result of said predetermined input, automatically returns to at least partially muted after a predetermined period (i.e. when characteristics of the audio signals supplied to the headphones are varied in accordance with the direction of the head of the listener based on the table memorized in memory the characteristics of the audio signals can be varied in accordance with the direction of the head of the listener; col. 11 lines 20 - 27. Depending on the required re-orientation of the sound field, it is inherent that the moving will cause the system to mute and un-mute the speakers in order to effectively rotate the simulated sound field sources).

Regarding **Claim 10**, in addition to the elements stated above regarding claim 1, Inanaga further discloses:

wherein the audio field is notionally divided in azimuth and/or elevation to form said segments (the system simulates a plurality of speakers around a users head which are rotated when the head rotates, along the horizontal plane; col. 11 lines 15 - 27).

Regarding **Claim 11**, in addition to the elements stated above regarding claim 1, Inanaga further discloses:

wherein the segments are specified relative to a current direction of facing of the user with the latter being assumed to be in a reference position (when characteristics of the audio signals supplied to the headphones are varied in accordance with the direction of the head of the listener based on the table memorized in memory the characteristics of the audio signals can be varied in accordance with the direction of the head of the listener; col. 11 lines 20 - 27)

Regarding **Claim 12**, in addition to the elements stated above regarding claim 1, Inanaga further discloses:

wherein the segments are specified relative to a presentation reference determined by a mounting configuration of audio output devices used to synthesize said sound sources (when characteristics of the audio signals supplied to the headphones are varied in accordance with the direction of the head of the listener based on the table

Art Unit: 2644

memorized in memory the characteristics of the audio signals can be varied in accordance with the direction of the head of the listener; col. 11 lines 20 - 27).

Regarding **Claim 13**, in addition to the elements stated above regarding claim 1, Inanaga further discloses:

wherein the segments are specified relative to an audio field reference that can be rotated relative to a presentation reference determined by a mounting configuration of audio output devices used to synthesize said sound sources (when characteristics of the audio signals supplied to the headphones are varied in accordance with the direction of the head of the listener based on the table memorized in memory the characteristics of the audio signals can be varied in accordance with the direction of the head of the listener; col. 11 lines 20 - 27).

Regarding **Claim 14**, in addition to the elements stated above regarding claim 1, Inanaga further discloses:

wherein the specification of the segments is set by user input (i.e. for each set of tables, the shapes of the head and the auricles of the listener are varied and values of data are varied in response to characteristics of the headphone, one of the three sets of tables is selected by the switcher; col. 10 lines 15 – 25. These inputs are input by the user and the rotation of the virtual speakers is based in part upon these inputs).

Regarding **Claim 15**, in addition to the elements stated above regarding claim 1, Inanaga further discloses:

wherein the segments have a default specification (i.e. the virtual speakers are simulated and as the listeners head moves, the movement is based upon the variation from the standard direction; abstract).

Regarding **Claim 16**, in addition to the elements stated above regarding claim 1, Inanaga further discloses:

wherein the sound sources are arranged in groups with each group being associated with a respective audio-field reference relative to which the sound sources of the group are positioned (i.e. obtaining the sense of a sound field as if a plurality of speaker apparatus were disposed at the virtual sound source positions to reproduce sounds; col. 11 lines 17 -21),

the audio-field references being independently moveable relative to a presentation reference which is determined by a mounting configuration of audio output devices used to synthesize said sound sources (when characteristics of the audio signals supplied to the headphones are varied in accordance with the direction of the head of the listener based on the table memorized in memory the characteristics of the audio signals can be varied in accordance with the direction of the head of the listener; col. 11 lines 20 - 27);

the change in audibility of sound sources of a segment caused by said predetermined user input being applied to sound sources of all said groups (i.e. for each

set of tables, the shapes of the head and the auricles of the listener are varied and values of data are varied in response to characteristics of the headphone, one of the three sets of tables is selected by the switcher; col. 10 lines 15 – 25. These inputs are input by the user and the rotation of the virtual speakers is based in part upon these inputs).

Regarding **Claim 17**, in addition to the elements stated above regarding claim 1, Inanaga further discloses:

wherein the sound sources are arranged in groups with each group being associated with a respective audio-field reference relative to which the sound sources of the group are positioned (i.e. obtaining the sense of a sound field as if a plurality of speaker apparatus were disposed at the virtual sound source positions to reproduce sounds; col. 11 lines 17 -21),

the audio-field references being independently moveable relative to a presentation reference which is determined by a mounting configuration of audio output devices used to synthesize said sound sources (when characteristics of the audio signals supplied to the headphones are varied in accordance with the direction of the head of the listener based on the table memorized in memory the characteristics of the audio signals can be varied in accordance with the direction of the head of the listener; col. 11 lines 20 - 27);

the change in audibility of sound sources of a segment caused by said predetermined user input being applied to sound sources of a selected one or more

Art Unit: 2644

groups (i.e. for each set of tables, the shapes of the head and the auricles of the listener are varied and values of data are varied in response to characteristics of the headphone, one of the three sets of tables is selected by the switcher; col. 10 lines 15 – 25. These inputs are input by the user and the rotation of the virtual speakers is based in part upon these inputs).

Regarding **Claim 18**, in addition to the elements stated above regarding claim 1, Inanaga further discloses:

wherein the audibility of sound sources in multiple segments is changed by the same said user input (i.e. for each set of tables, the shapes of the head and the auricles of the listener are varied and values of data are varied in response to characteristics of the headphone, one of the three sets of tables is selected by the switcher; col. 10 lines 15 – 25. These inputs are input by the user and the rotation of the virtual speakers is based in part upon these inputs).

Regarding **Claim 19**, in addition to the elements stated above regarding claim 1, Inanaga further discloses:

wherein the audio filed is stabilized relative to one of:

- a user's head;
- a user's body;
- a vehicle in which the user is traveling;
- the world

this stabilization taking account of whether audio output devices are used to synthesize the sound sources are world, vehicle, body or head mounted, and , as appropriate, rotation of the user's head or body, or turning of the vehicle (when characteristics of the audio signals supplied to the headphones are varied in accordance with the direction of the head of the listener based on the table memorized in memory the characteristics of the audio signals can be varied in accordance with the direction of the head of the listener; col. 11 lines 20 – 27).

Regarding **Claims 21 and 33**, Inanaga discloses:

An apparatus for providing an audio user interface in which items are represented in an audio field by corresponding synthesized sound sources from where sounds related to the items appear to emanate (title and abstract), the apparatus comprising:

storage means for storing segmentation data specifying a division of the audio field into multiple segments (i.e. The integrating circuit processes the digital audio signals supplied thereto from the signal source and data concerning impulse response, dependent on head position and memorized in the memory; abstract);

input means for receiving a predetermined user input indicative of at least one said segments for which the audibility of the sound sources encompassed thereby is to be changed (i.e. for each set of tables, the shapes of the head and the auricles of the listener are varied and values of data are varied in response to characteristics of the

headphone; one of the three sets of tables is selected by the switcher; col. 10 lines 15 – 25)

rendering-position determining means for determining, for each sound source, an associated rendering position at which the sound source is to be synthesized to sound in the audio field ;audibility-determining means for determining the audibility of each sound source based on its rendering position, the segmentation data, and said user input ; rendering means, including audio output devices, for generating an audio field in which said sound sources are synthesized at their associated rendering positions with audibility as determined by said audibility determining means (when characteristics of the audio signals supplied to the headphones are varied in accordance with the direction of the head of the listener based on the table memorized in memory the characteristics of the audio signals can be varied in accordance with the direction of the head of the listener; col. 11 lines 20 – 27 and it is possible for the listener to obtain a sense of a sound field as if a plurality of speakers were disposed at the virtual sound source positions; col. 11 lines 15 - 22)

Regarding **Claims 22 and 34**, in addition to the elements stated above regarding claims 21 and 33, Inanaga further discloses:

wherein the audibility-determining means is responsive to said predetermined user input to change the audibility of the synthesized sound sources in said at least one segment from un-muted to at least partially muted (i.e. when characteristics of the audio



signals supplied to the headphones are varied in accordance with the direction of the head of the listener based on the table memorized in memory the characteristics of the audio signals can be varied in accordance with the direction of the head of the listener; col. 11 lines 20 - 27. Depending on the required re-orientation of the sound field, it is inherent that the moving will cause the system to mute and un-mute the speakers in order to effectively rotate the simulated sound field sources).

Regarding **Claims 23 and 35**, in addition to the elements stated above regarding claims 22 and 34, Inanaga further discloses:

wherein the audibility-determining means, in changing the audibility of the sound sources in a said segment from un-muted to an at least partially muted, is further operative to set the audibility of any previously at-least-partially muted sound sources in other segments to un-muted. (i.e. when characteristics of the audio signals supplied to the headphones are varied in accordance with the direction of the head of the listener based on the table memorized in memory the characteristics of the audio signals can be varied in accordance with the direction of the head of the listener; col. 11 lines 20 - 27. Depending on the required re-orientation of the sound field, it is inherent that the moving will cause the system to mute and un-mute the speakers in order to effectively rotate the simulated sound field sources)..

Regarding **Claims 24 and 36**, in addition to the elements stated above regarding claims 22 and 34, Inanaga further discloses:

wherein the audibility-determining means is further operative to automatically return the audibility of sound sources that have been at least partially muted as a result of said predetermined input, to un-muted after a predetermined period. (i.e. when characteristics of the audio signals supplied to the headphones are varied in accordance with the direction of the head of the listener based on the table memorized in memory the characteristics of the audio signals can be varied in accordance with the direction of the head of the listener; col. 11 lines 20 - 27. Depending on the required re-orientation of the sound field, it is inherent that the moving will cause the system to mute and un-mute the speakers in order to effectively rotate the simulated sound field sources).

Regarding **Claims 25 and 37**, in addition to the elements stated above regarding claims 21 and 33, Inanaga further discloses:

wherein the audibility-determining means is responsive to said predetermined user input to change the audibility of the synthesized sound sources in said at least one segment from at least partially muted to un-muted (i.e. when characteristics of the audio signals supplied to the headphones are varied in accordance with the direction of the head of the listener based on the table memorized in memory the characteristics of the audio signals can be varied in accordance with the direction of the head of the listener; col. 11 lines 20 - 27. Depending on the required re-orientation of the sound field, it is

inherent that the moving will cause the system to mute and un-mute the speakers in order to effectively rotate the simulated sound field sources).

Regarding **Claims 26 and 38**, in addition to the elements stated above regarding claims 25 and 37, Inanaga further discloses:

wherein the audibility-determining means, in changing the audibility of the sound sources in a said segment from at least partially muted to un-muted, is further operative to set the audibility of any previously un-muted sound sources in other segments to at-least-partially muted. (i.e. when characteristics of the audio signals supplied to the headphones are varied in accordance with the direction of the head of the listener based on the table memorized in memory the characteristics of the audio signals can be varied in accordance with the direction of the head of the listener; col. 11 lines 20 - 27. Depending on the required re-orientation of the sound field, it is inherent that the moving will cause the system to mute and un-mute the speakers in order to effectively rotate the simulated sound field sources).

Regarding **Claims 27 and 39**, in addition to the elements stated above regarding claims 25 and 38, Inanaga further discloses:

wherein the audibility-determining means is further operative to automatically return the audibility of sound sources that have been un-muted as a result of said predetermined input, to at least partially muted after a predetermined period. (i.e. when characteristics of the audio signals supplied to the headphones are varied in

Art Unit: 2644

accordance with the direction of the head of the listener based on the table memorized in memory the characteristics of the audio signals can be varied in accordance with the direction of the head of the listener; col. 11 lines 20 - 27. Depending on the required re-orientation of the sound field, it is inherent that the moving will cause the system to mute and un-mute the speakers in order to effectively rotate the simulated sound field sources).

Regarding **Claims 28 and 40**, in addition to the elements stated above regarding claims 21 and 33, Inanaga further discloses:

wherein the segmentation data divides the audio field into segments specified relative to a presentation reference determined by a mounting configuration of the audio output devices (it is possible for the listener to obtain a sense of a sound field as if a plurality of speakers were disposed at the virtual sound source positions; col. 11 lines 15 - 22)

the rendering-position determining means being operative to determine the rendering positions of the sound sources relative to said presentation reference whereby the audibility determining means can directly determine the segment location of a sound source by comparing the rendering position of the sound source with the segmentation data (i.e. when characteristics of the audio signals supplied to the headphones are varied in accordance with the direction of the head of the listener based on the table memorized in memory the characteristics of the audio signals can be varied in accordance with the direction of the head of the listener; col. 11 lines 20 – 27).

Regarding **Claims 29 and 41**, in addition to the elements stated above regarding claims 21 and 33, Inanaga further discloses:

wherein the audio output devices are intended for mounting off the user's head and the apparatus further comprises a head tracking arrangement for determining the angular offset between the user's current direction of facing and a presentation reference determined by a mounting configuration of audio output devices (i.e. when characteristics of the audio signals supplied to the headphones are varied in accordance with the direction of the head of the listener based on the table memorized in memory the characteristics of the audio signals can be varied in accordance with the direction of the head of the listener; col. 11 lines 20 – 27 and col. 10 lines 10 - 26);

the segmentation data dividing the audio field into segments relative to a current direction of facing of the user and the rendering-position determining means being operative to determine the rendering positions of the sound sources relative to said presentation reference; the audibility-determining means being operative to use said angular offset to relate the segmentation data to the presentation reference whereby to enable the segment location of a sound source to be determined (i.e. the angle is changed at every angle such that the listener can distinguish the head gyration angle with both ears when the listener turns the head; col. 10 lines 10 – 26).

Regarding **Claims 30 and 42**, in addition to the elements stated above regarding claims 21 and 33, Inanaga further discloses:

wherein the segmentation data divides the audio field into segments specified relative to an audio field reference (i.e. obtaining the sense of a sound field as if a plurality of speaker apparatus were disposed at the virtual sound source positions to reproduce sounds; col. 11 lines 17 -21),

the apparatus further comprising offset means for controlling an offset between the audio field reference and a presentation reference determined by a mounting configuration of the audio output devices; the rendering-position determining means being operative to determine the rendering positions of the sound sources relative to said presentation reference; and the offset means being operative to provide a measure of said offset to the audibility determining means with the latter being arranged to use this measure to relate the segmentation data to the presentation reference where by to enable the segment location of a sound source to be determined. (i.e. when characteristics of the audio signals supplied to the headphones are varied in accordance with the direction of the head of the listener based on the table memorized in memory the characteristics of the audio signals can be varied in accordance with the direction of the head of the listener; col. 11 lines 20 – 27 and the angle is changed at every angle such that the listener can distinguish the head gyration angle with both ears when the listener turns the head; col. 10 lines 10 – 26).

Regarding **Claims 31 and 43**, in addition to the elements stated above regarding claims 21 and 33 and the 112 second paragraph rejections, Inanaga further discloses:

Including user-operable means for modifying specification (segmentation) data (i.e. for each set of tables, the shapes of the head and the auricles of the listener are varied and values of data are varied in response to characteristics of the headphone, one of the three sets of tables is selected by the switcher; col. 10 lines 15 – 25).

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

**Claims 20, 32 and 44** are rejected under 35 U.S.C. 103(a) as being unpatentable over Inanaga (U.S. Patent 5,526,429).

Regarding **Claims 20, 32 and 44**, in addition to the elements stated above regarding claims 1, 21 and 33, Inanaga fails to disclose the limitations of claim 20 and 32 ~~and~~ 44 -

However, using audio labels to select services is notoriously well known in the art. Inanaga's system is capable of items as audio labels for services selecting a service, much like any audio reproduction system. It would have been obvious to add the feature wherein at least some of the said items represented by the sound sources are audio labels for services, the method further involving selecting a service by

Art Unit: 2644

selecting the corresponding audio-label sound source. One would have been motivated to do so in order to permit blind people to select menu items in an audio/video type of system.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andrew C. Flanders whose telephone number is (571) 272-7516. The examiner can normally be reached on M-F 8:30 - 5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vivian Chin can be reached on (571) 272-7848. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

acf

  
VIVIAN CHIN  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2600